

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Scherrmann et al.**

Serial No.: **Not Yet Assigned**

Filed: **January 9, 2002**

For: **Cocaethylene immunogens and antibodies**

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) Examiner: Not Yet Assigned  
)  
) Art Unit: Not Yet Assigned  
)  
) **CLEAN COPY OF CLAIMS**  
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**BOX PATENT APPLICATION**

Assistant Commissioner for Patents  
PO BOX 2327  
Arlington, VA 22202

Sir:

The following is a clean copy of the claims with the amendments as shown on the attached  
"Version with Markings to Show Changes Made".

**In the Claims:**

13. (New) A composition comprising:  
a hybridoma cell culture producing monoclonal antibodies which bind specifically to  
cocaine and cocaethylene and have low or no cross reactivity with benzoyl ecgonine.
14. (New) The hybridoma cell line according to Claim 13, wherein said cell line is produced  
from a host immunized with an immunogen comprising at least one cocaethylene hapten

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conjugated to an antigenic protein, wherein said cocaethylene hapten comprises N-methyl tropane substituted at the 2-position with a carboxyethyl group and at the 3-position with a benzoyloxy group, wherein the benzoyloxy group is substituted at the para position with an aliphatic linking group of from 1-6 atoms, and said linking group comprises carbon atoms and 0 to 2 heteroatoms, said heteroatoms consisting of oxygen and nitrogen, wherein said aliphatic linking group terminating in said antigenic protein.

15. (New) The hybridoma cell line according to Claim 13, wherein said cell line is produced from a host immunized with an immunogen comprising at least one cocaethylene hapten conjugated to an antigenic protein, wherein said cocaethylene hapten comprises N-methyl tropane substituted at the 2-position by carboxyethyl or N-ethylcarboxamide and at the 3-position by benzoyloxy or benzamido, wherein bonded at the para position of said benzoyloxy or benzamido is a linking group or a carboxy group is attached to said linking group, wherein at least one of the substituents has an amido group, and wherein said bonding to the antigenic protein is through said carboxyl group.
16. (New) A monoclonal antibody produced by a hybridoma cell according to any one of Claims 13 to 15
17. (New) A hybridoma cell line produced by fusing spleen cells from a host immunized with an immunogen according to Claim 15 with immortalized host B cells, wherein said hybridoma cell line produces a monoclonal antibody which reacts with cocaine and cocaethylene and has low or no cross reactivity with benzoyl ecgonine.
18. (New) The hybridoma cell line according to Claim 17, wherein said antigenic protein is bovine serum albumin.
19. (New) The hybridoma cell line according to Claim 17, wherein said antigenic protein is

keyhole limpet hemocyanin.

20. (New) The hybridoma cell line according to Claim 17, wherein said antigenic protein is tetanus toxoid.
21. (New) A monoclonal antibody produced by a hybridoma cell line according to any one of Claims 17-20.
22. (New) A monoclonal antibody according to Claim 21, wherein said monoclonal antibody is classified IgG, or equivalent thereof.
23. (New) A monoclonal antibody, which binds specifically to cocaine and cocaethylene and has low or no cross reactivity to benzoyl ecgonine.
24. (New) A monoclonal antibody according to Claim 23, labeled with an agent capable of providing a detectable signal.
25. (New) A monoclonal antibody according to Claim 23, wherein said monoclonal antibody has an affinity of at least  $5 \times 10^8$  for cocaine and cocaethylene and a comparatively low affinity for benzoyl ecgonine, wherein said monoclonal antibody is classified as IgG, or equivalent thereof.
26. (New) A composition comprising a monoclonal antibody according to Claim 23.

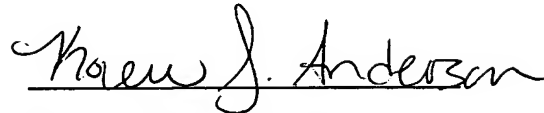
Scherrman *et al.*  
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Date: 1/9-02

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Respectfully submitted,



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